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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,926

12/30/2005

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25944 7590 01/23/2009
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EXAMINER

RUSH, ERIC

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

01/23/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Amendment

1. This action is responsive to the amendment and remarks received on 12 September 2008. Claims 1 – 2 and 4 – 25 are currently pending.

Claim Rejections - 35 USC § 101

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. The rejections to claims 22 – 23 under 35 U.S.C. 101 are withdrawn in view of the amendment and remarks received on 9/12/2008.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 1 – 2 and 12 – 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claims 1 – 2 and 12 – 25 recite the limitation "the left and right target regions" or "the target regions" in and throughout the claims. There is insufficient antecedent basis for this limitation in the claim.

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7. Claims 4 – 11 are also rejected under 35 U.S.C. 112 second paragraph as being dependent upon a rejected base claim for insufficient antecedent basis.

Claim Rejections - 35 USC § 102

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1 – 2 and 4 - 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Blake et al. U.S. Publication No. 2005/0232510 A1.

- With regards to claim 1, Blake et al. teach a stereoscopic image generating method having a left image and a right image for stereoscopic vision, said stereoscopic image generating method comprising: a removed region extraction step of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between the left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Blake et al., Page 2 Paragraph 0025 and Page 4 Paragraphs 0048 - 0055) and a removed region processing step of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0057)

- With regards to claim 2, Blake et al. teach a stereoscopic image generating method having a left image and a right image for stereoscopic vision, said stereoscopic image generating method comprising: a removed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region; (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) and a removed region processing step of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0057)

- With regards to claim 4, Blake et al. teach the stereoscopic image generating method as claimed in claim 1, wherein the processing of making more inconspicuous is a processing of blurring the removed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which induces blur)

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- With regards to claim 5, Blake et al. teach the stereoscopic image generating method as claimed in claim 2, wherein the processing of making more inconspicuous is a processing of blurring the removed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which induces blur)
- With regards to claim 6, Blake et al. teach the stereoscopic image generating method as claimed in claim 1, wherein the processing of making more inconspicuous is a processing of reducing contrast of the removed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which is capable of inducing contrast reduction)
- With regards to claim 7, Blake et al. teach the stereoscopic image generating method as claimed in claim 2, wherein the processing of making more inconspicuous is a processing of reducing contrast of the removed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which is capable of inducing contrast reduction)

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- With regards to claim 8, Blake et al. teach the stereoscopic image generating method as claimed in claim 1, wherein the processing of making more inconspicuous is a processing of reducing saturation or brightness of the removed region. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058)
- With regards to claim 9, Blake et al. teach the stereoscopic image generating method as claimed in claim 2, wherein the processing of making more inconspicuous is a processing of reducing saturation or brightness of the removed region. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058)
- With regards to claim 10, Blake et al. teach the stereoscopic image generating method as claimed in claim 1, wherein the processing of making more inconspicuous is a processing of bringing a hue of the removed region to a cold color family. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058, the process alters the color of the inconspicuous region bringing the hue to any color family, which includes cold colors)
- With regards to claim 11, Blake et al. teach the stereoscopic image generating method as claimed in claim 2, wherein the processing of

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making more inconspicuous is a processing of bringing a hue of the removed region close to a cold color family. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058)

- With regards to claim 12, Blake et al. teach the stereoscopic image generating method as claimed in claim 1, wherein the processing of making more inconspicuous is a processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058)
- With regards to claim 13, Blake et al. teach a stereoscopic image having a left image and a right image for stereoscopic vision, the stereoscopic image being processed so as to make more inconspicuous left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane than a region remaining after eliminating the removed region from the target regions. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041)

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- With regards to claim 14, Blake et al. teach the stereoscopic image generating method as claimed in claim 1, wherein the processing of making more inconspicuous is one of or a combination of the following processing's: (1) processing of blurring the removed region; (2) processing of reducing contrast of the removed region; (3) processing of reducing saturation or brightness of the removed region; (4) processing of bringing a hue of the removed region close to a cold color family; and (5) processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 3 Paragraphs 0039 – 0041 and Page 4 Paragraph 0053 – Page 5 Paragraph 0058)

- With regards to claim 15, Blake et al. teach the stereoscopic image generating method as claimed in claim 2, wherein the processing of making more inconspicuous is one of or a combination of the following processing's: (1) processing of blurring the removed region; (2) processing of reducing contrast of the removed region; (3) processing of reducing saturation or brightness of the removed region; (4) processing of bringing a hue of the removed region close to a cold color family; and (5) processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after

eliminating the removed region from the target regions. (Blake et al., Page 3 Paragraphs 0039 – 0041 and Page 4 Paragraph 0053 – Page 5 Paragraph 0058)

- With regards to claim 16, Blake et al. teach a stereoscopic image generating apparatus having a left image and a right image for stereoscopic vision, (Blake et al., Page 2 Paragraph 0025) said stereoscopic image generating apparatus comprising: removed region extraction means of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between the left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Blake et al., Page 2 Paragraph 0025 and Page 4 Paragraphs 0048 - 0055) and a removed region processing means for carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction means than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0057)
- With regards to claim 17, Blake et al. teach a stereoscopic image generating apparatus having a left image and a right image for stereoscopic vision, (Blake et al., Page 2 Paragraph 0025) said

stereoscopic image generating apparatus comprising: a removed region extraction means of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region; (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) and a removed region processing means of carrying out processing of making more inconspicuous the removed region identified by said removed region extraction means than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0057)

- With regards to claim 18, Blake et al. teach a stereoscopic viewing method of watching a stereoscopic image having a left image and a right image for stereoscopic vision, said stereoscopic viewing method comprising: (Blake et al., Page 2 Paragraph 0025) a removed region extraction step of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between the left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Blake et al., Page 2 Paragraph 0025 and Page 4 Paragraphs 0048 - 0055) and a removed region processing step of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction step than a

region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0057)

- With regards to claim 19, Blake et al. teach a stereoscopic image generating method having a left image and a right image for stereoscopic vision, said stereoscopic viewing method comprising: a removed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region; (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) and a removed region processing step of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0057)
- With regards to claim 20, Blake et al. teach a stereoscopic viewing apparatus for showing a stereoscopic image having a left image and a right image for stereoscopic vision, (Blake et al., Page 2 Paragraph 0025) said stereoscopic viewing apparatus comprising: removed region extraction means of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between the left and

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right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Blake et al., Page 2 Paragraph 0025 and Page 4 Paragraphs 0048 - 0055) and a removed region processing means for carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction means than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0057)

- With regards to claim 21, Blake et al. teach a stereoscopic image generating apparatus having a left image and a right image for stereoscopic vision, (Blake et al., Page 2 Paragraph 0025) said stereoscopic viewing apparatus comprising: a removed region extraction means of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region; (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) and a removed region processing means of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction means than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0057)

- With regards to claim 22, Blake et al. teach a computer readable medium storing a program for controlling a stereoscopic image generating apparatus having a left image and a right image for stereoscopic vision, (Blake et al., Page 5 Paragraphs 0059 – 0063) said program causing said stereoscopic image generating apparatus to execute: a removed region extraction step of extracting a more inconspicuous region as a removed by identifying the more inconspicuous region between the left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Blake et al., Page 2 Paragraph 0025 and Page 4 Paragraphs 0048 - 0055) and a removed region processing step of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0057)
- With regards to claim 23, Blake et al. teach a computer readable medium storing a program for controlling a stereoscopic image generating apparatus having a left image and a right image for stereoscopic vision, (Blake et al., Page 5 Paragraphs 0059 – 0063) said program, causing said stereoscopic image generating apparatus to execute: a removed region extraction step of extracting left and right regions which do not include

fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region; (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) and a removed region processing step of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0057)

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 24 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blake et al. U.S. Publication No. 2005/0232510 A1 in view of Mashitani et al. U.S. Publication No. 2005/0089212 A1.

- With regards to claim 24, Blake et al. teach a stereoscopic image generating method which has a left image and a right image for stereoscopic vision, and forms a virtual stereoscopic image by vergence angles generated from individual points corresponding in the left image and the right image, said stereoscopic image generating method comprising: a removed region extraction step of extracting a more

inconspicuous region as a removed region by identifying the more inconspicuous region between the left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Blake et al., Page 2 Paragraph 0025 and Page 4 Paragraphs 0048 - 0055) and a removed region processing step of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0057) Blake et al. fail to teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of stereoscopic image which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. Mashitani et al. teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of stereoscopic image which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. (Mashitani et al., Page

25 Paragraphs 0352 – 0357 and Page 27 Paragraph 0371) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Blake et al. with the teachings of Mashitani et al. This modification would have been prompted in order to minimize occlusions and artifacts produced in the stereographic image.

- With regards to claim 25, Blake et al. teach a stereoscopic image generating method which has a left image and a right image for stereoscopic vision, and forms a virtual stereoscopic image by vergence angles generated from individual points corresponding in the left image and the right image, said stereoscopic image generating method, comprising: a removed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region; (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) and a removed region processing step of carrying out processing of making more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0057) Blake et al. fail to teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image

and a right image of a stereoscopic image which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. Mashitani et al. teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of a stereoscopic image which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. (Mashitani et al., Page 25 Paragraphs 0352 – 0357 and Page 27 Paragraph 0371) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Blake et al. with the teachings of Mashitani et al. This modification would have been prompted in order to minimize occlusions and artifacts produced in the stereographic image.

Response to Arguments

12. Applicant's arguments filed 9/12/2008 have been fully considered but they are not persuasive. In the arguments and remarks filed, 9/12/2008, the Applicant's Representative argues, on page 12, that Blake et al. do not disclose correcting both a right and a left image of a set of stereo images. The Examiner respectfully disagrees.

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Blake et al. teach a system and method for correcting occlusions in stereographic images, which are formed from a left and right image. The Examiner asserts that Blake et al. do in fact teach the correction of both images; see Page 3 Paragraphs 0034 – 0040. The method disclosed by Blake et al. process both a left and right image.

Furthermore, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., correcting both a right and a left image of a set of stereo images) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC RUSH whose telephone number is (571)270-3017. The examiner can normally be reached on 7:30AM - 5:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew C Bella/
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ER